FACULTY OF COMPUTING & INFORMATION TECHNOLOGY
KING ABDULAZIZ UNIVERSITY

كلية الحاسبات وتقنية المعلومات
جامعة الملك عبدالعزيز

CPIT 110

Instructor Manual

For 50 Minutes Lectures

Week 6

06/10/2019 – 10/10/2019

Chapter 3

Mathematical Functions, and Strings

Chapter 4

Selections

This Week Events	– Lab #5 (Chapter 3)
Next Week Events	– Lab #6 (Chapter 4)

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Instructor Manual – Lecture #1 in Week 6

Chapter	3. Mathematical Functions, and Strings
Number of Lectures	3 (50 minutes / Lecture)
Lecture	3 of 3
Slides	63 - 84
Date	Sunday 06/10/2019

Week	Lecture
6	3 of 3
	Slides 63 - 84

Topics to Be Covered

- **3.6. Formatting Numbers and Strings**
  - 3.6.1. Formatting Floating-Point Numbers
  - 3.6.3. Formatting as a Percentage
  - 3.6.4. Justifying Format
  - 3.6.5. Formatting Integers
  - 3.6.6. Formatting Strings

Topics Not to Be Covered

- **3.5. Introduction to Objects and Methods**
- **3.6. Formatting Numbers and Strings**
  - 3.6.2. Formatting in Scientific Notation
- **3.7. Drawing Various Shapes**
- **3.8. Drawing with Colors and Fonts**

Learning Objectives

Learning Outcomes	Topics
– To format numbers and strings using the format function.	3.6. Formatting Numbers and Strings

Exercises

❖ 3.6. Formatting Numbers and Strings

1. Show the printout of the following statements:

```
1  print(format("Programming is fun", "25s"))
2  print(format("Programming is fun", "<25s"))
3  print(format("Programming is fun", ">25s"))
```

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Instructor Manual – Lecture #2 in Week 6

Chapter	4. Selections
Number of Lectures	3 (50 minutes / Lecture)
Lecture	1 of 6
Slides	1 - 33
Date	Tuesday 08/10/2019

Week	Lecture
6	1 of 6
	Slides 1 - 33

Topics to Be Covered

- **4.1. Introduction**
- **4.2. Boolean Types, Values, and Expressions**
- **4.3. Generating Random Numbers**

Learning Objectives

Learning Outcomes	Topics
– To write Boolean expressions using comparison operators.	4.2. Boolean Types, Values, and Expressions
– To generate random numbers using the random.randint(a, b) or random.random() functions. – To program with Boolean expressions (AdditionQuiz).	4.3. Generating Random Numbers

Exercises

❖ **4.2. Boolean Types, Values, and Expressions**

1. List six comparison operators.
2. Can the following conversions be allowed? If so, find the converted result
   - i = int(True)
   - j = int(False)
   - b1 = bool(4)
   - b2 = bool(0)

❖ **4.3. Generating Random Numbers**

1. How do you generate a random integer i such that 0 <= i< 20 ?
2. How do you generate a random integer i such that 10 <= i < 20 ?
3. How do you generate a random integer i such that 10 <= i < 50 ?
4. How do you generate a random integer 0 or 1?

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Instructor Manual – Lecture #3 in Week 6

Chapter	4. Selections
Number of Lectures	3 (50 minutes / Lecture)
Lecture	2 of 6
Slides	34 - 58
Date	Thursday 10/10/2019

Week	Lecture
6	2 of 6
	Slides 34 - 58

Topics to Be Covered

- **4.4. If Statements**
- **4.6. Two-Way if-else Statements**

Topics Not to Be Covered

- **4.5. Case Study: Guessing Birthday**

Learning Objectives

Learning Outcomes	Topics
– To implement selection control using one-way if statements.	4.4. If Statements
– To implement selection control using two-way if-else statements.	4.6. Two-Way if-else Statements

Exercises

❖ **4.4. If Statements**

1. Write an if statement that assigns 1 to x if y is greater than 0.
2. Write an if statement that increases pay by 3% if score is greater than 90.

❖ **4.6. Two-Way if-else Statements**

1. Write an if statement that increases pay by 3% if score is greater than 90, otherwise it increases pay by 1%.
2. What is the printout of the code in (a) and (b) if number is 30 and 35, respectively?
   - A)

```
if number % 2 == 0:
    print(number, "is even.")
print(number, "is odd.")
```

   - B)

```
if number % 2 == 0:
    print(number, "is even.")
else:
    print(number, "is odd.")
```